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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,593	07/16/2001	Pankaj Vyas	CSCO-008/4339	2619

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EXAMINER
MOORE JR, MICHAEL J

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 05/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>21 February 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-16,18-27,29-39,41-47 and 52-55* is/are pending in the application.

    4a) Of the above claim(s) *12-15,24-26 and 36-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10,16,18-23,27,29-34,39,41-46 and 52-55* is/are rejected.

7)☒ Claim(s) *11,35 and 47* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

2/21/2006 has been entered.

Election/Restrictions

2.   Claims **12-15, 24-26, and 36-38** remain withdrawn from further consideration

pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention. Applicant is

requested to cancel these non-elected claims.

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 2/21/2006 is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has

considered the information disclosure statement.

Claim Objections

4.   Claims **3, 18, 29, and 41** are objected to because of the following informalities:

      Regarding claim **3**, this claim is objected to as it currently depends upon

cancelled claim **2**. It is believed that this claim should now depend on claim **1**.

      Regarding claim **18**, this claim is objected to as it currently depends upon

cancelled claim **17**. It is believed that this claim should now depend on claim **16**.

Regarding claim **29**, this claim is objected to as it currently depends upon

cancelled claim **28**. It is believed that this claim should now depend on claim **27**.

Regarding claim **41**, this claim is objected to as it currently depends upon

cancelled claim **40**. It is believed that this claim should now depend on claim **39**.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter, which the applicant regards as his invention.

6.   Claim **29** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

7.   Claim **29** recites the limitation "said data structure" in line 2. There is insufficient

antecedent basis for this limitation in the claim. Based upon Applicant's amendments to

independent claims **1, 16, and 39,** it is believed that independent claim **27** was meant to

include the limitation "a data structure" in place of "a table" on line 14.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims **1, 3-10, 16, 18-23, 27, 29-34, 39, and 41-46** are rejected under 35 U.S.C.

103(a) as being unpatentable over Lai et al. cited in Applicant's IDS submitted 2/21/06

(hereinafter "Lai").

Regarding claims **1 and 3**, *Lai* teaches a priority scheme for IP with QoS over

ATM on page 21, where the precedence field in the ToS field of an IP header is used to

determine which switched virtual circuit (SVC) to use for a particular data flow.

Lai does not explicitly teach the maintaining and use of a table data structure that

correlates specific precedence values of a ToS field with corresponding SVCs.

However, *Lai* further teaches on page 30 how the precedence field yields 8

different service classes of priority, and also teaches on page 31 how real-time traffic

classes have their own SVCs while lower priority classes are sent on aggregate SVCs.

Lai further teaches an algorithm on pages 32-35 for comparing precedence

values and determining which SVC a given incoming flow should be sent on.

At the time of the invention, it would have been obvious to someone of ordinary

skill in the art, given the above teachings, to perform the above algorithm using a table

data structure in order to provide organized storage of the data used for comparison.

Regarding claim **4**, *Lai* further teaches on page 31 how packets with class 0

through 5 priorities are sent on aggregate VCs.

Regarding claim **5**, *Lai* further teaches the provisioning of aggregate and

dedicated SVCs on page 22, Figures 7 and 8.

Regarding claim **6**, *Lai* further teaches on page 31 how packets with class 0

through 5 priorities are sent on aggregate VCs.

Regarding claim **7**, *Lai* further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

Regarding claim **8**, *Lai* further teaches the reception of a client request by an end-station and the following determination of which SVC to use based upon the precedence value on pages 32-33.

Regarding claim **9**, *Lai* further teaches the 3-bit precedence data present in the ToS octet of an IP datagram header as shown on page 28.

Regarding claim **10**, *Lai* further teaches host devices (edge routers) shown in Figures 7 and 8.

Regarding claims **16 and 18**, *Lai* teaches a priority scheme for IP with QoS over ATM on page 21, where the precedence field in the ToS field of an IP header is used by a host device (means) to determine which switched virtual circuit (SVC) to use for a particular data flow.

Lai does not explicitly teach the maintaining and use of a table data structure that correlates specific precedence values of a ToS field with corresponding SVCs.

However, *Lai* further teaches on page 30 how the precedence field yields 8 different service classes of priority, and also teaches on page 31 how real-time traffic classes have their own SVCs while lower priority classes are sent on aggregate SVCs.

Lai further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given the above teachings, to perform the above algorithm using a table data structure in order to provide organized storage of the data used for comparison.

Regarding claim **19**, *Lai* further teaches on page 31 how packets with class 0 through 5 priorities are sent on aggregate VCs.

Regarding claim **20**, *Lai* further teaches the provisioning of aggregate and dedicated SVCs on page 22, Figures 7 and 8.

Regarding claim **21**, *Lai* further teaches on page 31 how packets with class 0 through 5 priorities are sent on aggregate VCs.

Regarding claim **22**, *Lai* further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

Regarding claim **23**, *Lai* further teaches the 3-bit precedence data present in the ToS octet of an IP datagram header as shown on page 28.

Regarding claims **27 and 29**, *Lai* teaches a priority scheme for IP with QoS over ATM on page 21, where the precedence field in the ToS field of an IP header is used to determine which switched virtual circuit (SVC) to use for a particular data flow.

Lai does not explicitly teach the maintaining and use of a table data structure that correlates specific precedence values of a ToS field with corresponding SVCs.

However, *Lai* further teaches on page 30 how the precedence field yields 8 different service classes of priority, and also teaches on page 31 how real-time traffic classes have their own SVCs while lower priority classes are sent on aggregate SVCs.

Lai further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given the above teachings, to perform the above algorithm using a table data structure in order to provide organized storage of the data used for comparison.

Regarding claim **30**, *Lai* further teaches on page 31 how packets with class 0 through 5 priorities are sent on aggregate VCs.

Regarding claim **31**, *Lai* further teaches the provisioning of aggregate and dedicated SVCs on page 22, Figures 7 and 8.

Regarding claim **32**, *Lai* further teaches on page 31 how packets with class 0 through 5 priorities are sent on aggregate VCs.

Regarding claim **33**, *Lai* further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

Regarding claim **34**, *Lai* further teaches the 3-bit precedence data present in the ToS octet of an IP datagram header as shown on page 28.

Regarding claims **39 and 41**, *Lai* teaches a priority scheme for IP with QoS over ATM on page 21, where the precedence field in the ToS field of an IP header is used by a host device (router) to determine which switched virtual circuit (SVC) to use for a particular data flow.

Lai does not explicitly teach the maintaining and use of a table data structure in a memory that correlates specific precedence values of a ToS field with corresponding SVCs.

However, *Lai* further teaches on page 30 how the precedence field yields 8 different service classes of priority, and also teaches on page 31 how real-time traffic classes have their own SVCs while lower priority classes are sent on aggregate SVCs.

Lai further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

At the time of the invention, it would have been obvious to someone of ordinary skill in the art, given the above teachings, to perform the above algorithm using a table data structure in order to provide organized storage of the data used for comparison.

Regarding claim **42**, *Lai* further teaches on page 31 how packets with class 0 through 5 priorities are sent on aggregate VCs.

Regarding claim **43**, *Lai* further teaches the provisioning of aggregate and dedicated SVCs on page 22, Figures 7 and 8.

Regarding claim **44**, *Lai* further teaches on page 31 how packets with class 0 through 5 priorities are sent on aggregate VCs.

Regarding claim **45**, *Lai* further teaches an algorithm on pages 32-35 for comparing precedence values and determining which SVC a given incoming flow should be sent on.

Regarding claim **46**, *Lai* further teaches the 3-bit precedence data present in the ToS octet of an IP datagram header as shown on page 28.

10.   Claims **52-55** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lai et al. cited in Applicant's IDS submitted 2/21/06 (hereinafter "Lai") in view of

Miyamoto et al. (U.S. 6,618,381) ("Miyamoto").

Regarding claims **52-55**, *Lai* further teaches an ATM cloud (backbone) on page

22, Figures 7 and 8, that connect host devices A-E.

Lai does not explicitly teach where the ATM backbone comprises a plurality of

switches.

However, *Miyamoto* teaches an ATM system in Figure 1C comprising a plurality

of ATM nodes connecting end devices 1.

At the time of the invention, it would have been obvious to someone of ordinary

skill in the art, given these references, to use an ATM cloud as in *Lai* containing a

plurality of intermediate repeater ATM switches in order to provide more efficient

transmission of data flows.

Allowable Subject Matter

11.   Claims **11, 35, and 47** are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

12.   The following is a statement of reasons for the indication of allowable subject

matter:

Regarding claim **11**, while *Lai* teaches the method of claim **5**, *Lai* fails to teach

where the table stores an IP address, a network service provider access point (NSAP)

of the second router, a precedence value contained in the header, and a SVC identifier

in each row.

Regarding claim **35**, while *Lai* teaches the computer readable medium of claim

33, *Lai* fails to teach where the table stores an IP address, a network service provider

access point (NSAP) of the second router, a precedence value contained in the header,

and a SVC identifier in each row.

Regarding claim **47**, while *Lai* teaches the router of claim **41**, *Lai* fails to teach

where the SVC table stores a network service access point (NSAP) address and IP

address of an edge router at the next hop associated with each SVC, and where the

encapsulator sends an IP address of an edge router at the next hop and a precedence

value to the table as a key in order to determine which SVC to send the packet over.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571)

272-3168. The examiner can normally be reached on Monday-Friday (8:00am -

4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Michael J. Moore, Jr.
Examiner
Art Unit 2616

mjm MM

SEEMA S. RAO   5/9 /06
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TECHNOLOGY CENTER 2600